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PERUNGAVOOR, SATHYANARAYA V				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/532,548

**Applicant(s)**

GEHLEN ET AL.

**Examiner**

SATH V. PERUNGAVOOR

**Art Unit**

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

[1] A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 23, 2009 has been entered.

### ***Response to Arguments/Amendments***

[2] Presented arguments have been fully considered, but are rendered moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

[3] Claims 1-12, 19 and 20 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent<sup>1</sup> and recent Federal Circuit decisions<sup>2</sup> indicate that a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be

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<sup>1</sup> *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

<sup>2</sup> *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

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performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. The claims recite process steps without being tied to an apparatus/system, such as a computer or processor.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

[4] Claims 1-10, 13, 19 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Lin [US 2003/0151674 A1].

Regarding claim 1, Lin meets the claim limitations, as follows:

Method for determining the suitability of a digitized image of a person for person identification, with the steps [*abstract*]: segmenting the image of a person into a background area and a head or face area (*i.e. extract face region*) [*paras. 0088 and 0090*], analyzing the head or face area to determine at least one characteristic value (*i.e. face quality figure*) [*paras. 0088 and 0089*], comparing the at least one

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characteristic value (*i.e. face quality figure*) with at least one predetermined threshold value (*i.e. pre-set threshold*) [paras. 0088 and 0089], and making a determination of the suitability (*i.e. acceptable/ not acceptable*) of the image based on a result of the comparison [paras. 0088 and 0089].

Regarding claim 2, Lin meets the claim limitations, as follows:

Method according to claim 1, wherein the step of segmenting comprises performing a method for object recognition (*i.e. face detection*) [paras. 0088 and 0090].

Regarding claim 3, Lin meets the claim limitations, as follows:

Method according to claim 1, wherein analyzing the head or face area comprises detecting at least one geometric feature of the head or face area (*i.e. face region location-since the calculation of the quality of the face region inherently involves a determination of location the face region*) [paras. 0088 and 0090].

Regarding claim 4, Lin meets the claim limitations, as follows:

Method according to claim 3, wherein detecting at least one geometric feature of the head or face area comprises a size and/or shape and/or position (*i.e. face region location-since the calculation of the quality of the face region inherently involves a determination of location the face region*) and/or spatial orientation of the head or face area within the image of a person [paras. 0088 and 0090].

Regarding claim 5, Lin meets the claim limitations, as follows:

Method according to claim 1, wherein analyzing the head or face area comprises detecting at least one reproduction feature (*i.e. brightness figure*) of the head or face area [para. 0089].

Regarding claim 6, Lin meets the claim limitations, as follows:

Method according to claim 5, wherein the at least one reproduction feature that is to be detected comprises a contrast and/or a color distribution and/or a sharpness of the image and/or a brightness (*i.e. brightness figure*) and/or a grade of staining and/or a measure for the irradiation of the head or face area [para. 0089].

Regarding claim 7, Lin meets the claim limitations, as follows:

Method according to claim 1, wherein analyzing the head or face area comprises localizing sub-regions of the head or face area (*i.e. eye detection*) [paras. 0088 and 0091].

Regarding claim 8, Lin meets the claim limitations, as follows:

Method according to claim 7 with the additional step: analyzing the at least one localized sub-region (*i.e. red eye detection*) [para. 0089].

Regarding claim 9, Lin meets the claim limitations, as follows:

Method according to claim 1 with the step: analyzing the image of a person with respect to global criteria (*i.e. photo sharpness*) that apply to the entire image of a person [para. 0024].

Regarding claim 10, Lin meets the claim limitations, as follows:

Method according to claim 1 with the step: analyzing the background area of the image of a person (*i.e. line profile that includes both background and foreground pixels*) [*para. 0032*].

Regarding claims 13, 19 and 20, all claimed limitations are set forth and rejected as per discussion for claims 1, 3 and 5.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

[5] Claims 11, 12 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Wheeler et al. ("Wheeler") [US 2003/0095197 A1].

Regarding claims 11 and 16-18, Lin discloses the following claim limitations:

16. System for quality determination and correction of digitized images of persons [*abstract*] comprising a storage means for storing digitized image data [*para. 0025*], and a first data processing means for executing a method according to claim 1 [*para. 0025*].

17. A system according to claim 16 comprising an apparatus for generating digitized image data (*i.e. digital camera*) [para. 0025].

18. A system according to claim 16 comprising a display device for displaying whether a verified image or a modified image observes predetermined quality standards (*i.e. LCD*) [paras. 0025 and 0029].

Lin does not explicitly disclose the following claim limitations:

11. Method according to claim 1 with the step: determining whether a negatively evaluated image could fulfill the predetermined quality criteria after image correction.

16. *one of*: (1) a second data processing means for executing a correction method for a digitized image of a person, which does not fulfill one or more quality criteria during a determination method according to claim 1, comprising correcting at least one image reproduction feature in the entire image and/or the head or face area and/or the background area, and/or correcting at least one geometric feature of a head or face area displayed in the image of a person, and (2) for executing a correction method for a digitized image of a person, which does not fulfill one or more quality criteria during the determination method, comprising correcting at least one image reproduction feature in the entire image and/or the head or face area and/or the background area, and/or correcting at least one geometric feature of a head or face area displayed in the image of a person.

However, in the same field of endeavor Wheeler discloses the deficient claim limitations, as follows:



11. Method according to claim 1 with the step: determining whether a negatively evaluated image could fulfill the predetermined quality criteria after image correction (*i.e. this is assumed to be always true when the correction is applied*) [para. 0035].

16. for executing a correction method for a digitized image of a person [fig. 3], which does not fulfill one or more quality criteria during the determination method (*i.e. YES of 106*) comprising correcting at least one image reproduction feature in the entire image (*i.e. 110*) and/or the head or face area and/or the background area, and/or correcting at least one geometric feature of a head or face area displayed in the image of a person [fig. 3].

Lin and Wheeler are combinable because they are from the same field of image quality analysis.

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Lin with Wheeler and correct low quality images, the motivation being to improve image quality [para. 0033].

Regarding claims 12, 14 and 15, all claimed limitations are set forth and rejected as per discussion for claims 16-18.

### ***Allowable Subject Matter***

[6] The following claim will overcome the applied prior art.

1. A computer implemented method for determining the suitability of a digitized image of a person for person identification, with the steps:

segmenting the image of a person into a background area and a head or face area,

analyzing the head or face area to determine at least one geometric feature and at least one reproduction feature;

comparing the at least one geometric feature and the at least one reproduction feature with at least one predetermined threshold value,

making a determination of the suitability of the image based on a result of the comparison;

performing image correction when the determination of the suitability results in an image that does not fulfill one or more quality criteria;

wherein the image correction comprises:

correcting at least one image reproduction feature in the entire image and/or the head or face area and/or the background area;

correcting at least one geometric feature of a head or face area displayed in the image of a person;

wherein the at least one geometric feature comprises a size and/or shape and/or position and/or spatial orientation of the head or face area within the image of a person; and

wherein the at least one reproduction feature comprises a contrast and/or a color distribution and/or a sharpness of the image and/or a brightness and/or a grade of staining and/or a measure for the irradiation of the head or face area.

***Contact Information***

[7] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Sath V. Perungavoor whose telephone number is (571) 272-7455. The examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Bhavesh M. Mehta whose telephone number is (571) 272-7453, can be reached on Monday to Friday from 9:00am to 5:00pm. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dated: October 15, 2009

/Sath V. Perungavoor/

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